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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--|-------------|----------------------|---------------------|------------------|
| 10/695,058 | 10/28/2003 | Wolfgang Hildebrandt | GKNG 1182 PUS | 5958 |
| 7590 | 08/05/2005 | | EXAMINER | |
| Robert P. Renke Suite 250 28333 Telegraph Road Southfield, MI 48034 | | | BINDA, GREGORY JOHN | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 3679 | |

DATE MAILED: 08/05/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | |
|------------------------------|-------------------------------|------------------------------------|--|
| Office Action Summary | Application No. 10/695,058 | Applicant(s) HILDEBRANDT ET AL. | |
| | Examiner Greg Binda | Art Unit 3679 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 July 2005.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
 4a) Of the above claim(s) 3-5, 7-12, 14 and 17 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 2, 6, 13, 15 and 16 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 October 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input checked="" type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date <u>10/28/03</u> . | 6) <input type="checkbox"/> Other: _____ |

Election/Restrictions

1. Applicant's election without traverse of Species II show Fig. 2 in the reply filed on July 1, 2005 is acknowledged.

2. Claims 3-5, 7-12, 14 & 17 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected species, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on July 1, 2005.

In the reply applicant states "claims 1-18" read on the elected species. However, there are only seventeen claims. Of those, only claims 1, 2, 6, 13, 15 & 16 read on the elected species.

Information Disclosure Statement

3. The information disclosure statement filed October 23, 2003 fails to comply with:

- a. 37 CFR 1.98(a)(2), which requires a legible copy of each cited foreign patent document; each non-patent literature publication or that portion which caused it to be listed; and all other information or that portion which caused it to be listed. No copy of GB 2,319,584 has been received.
- b. 37 CFR 1.98(a)(3) because it does not include a concise explanation of the relevance, as it is presently understood by the individual designated in 37 CFR 1.56(c) most knowledgeable about the content of the information, of each patent listed that is not in the English language. DE 42 28 230 has been placed in the application file, but the information referred to therein has not been considered.

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Applicant is advised that the date of any re-submission of any item of information contained in this information disclosure statement or the submission of any missing element(s) will be the date of submission for purposes of determining compliance with the requirements based on the time of filing the statement, including all certification requirements for statements under 37 CFR 1.97(e). See MPEP § 609 ¶ C(1).

Drawings

4. The drawings are objected to because:
 - a. Many of the reference numerals are used to identify parts or features in one embodiment and then reused to identify modified versions of said parts or features in further embodiments. Such usage is proscribed. See MPEP § 608.02(e).
 - b. The drawings fail to show:
 - i. The claimed invention, a driveshaft comprising two constant velocity joints.
 - ii. First angles of intersection as recited in claim 1, line 4.
 - iii. Second angles of intersection as recited in claim 1, line 6.
 - iv. The outer joint part 12 formed with an inner cylindrical guide face 25. In Fig. 2B, the feature indicated by numeral 25 is not cylindrical.
5. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet,

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even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either “Replacement Sheet” or “New Sheet” pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

6. The title of the invention is objected to for including an undefined abbreviation or acronym, “VL”. The term “VL” when used in the art, refers to a plunging constant velocity joint (see for example pages 3 and 13 of GKN product manual). However, the “VL joint” in the title refers to the constant velocity joint in the claims which is not a plunging constant velocity joint.

7. The specification is objected to as failing because the detailed description fails to provide proper antecedent basis for the following claimed subject matter:

- a. Claim 1, line 14 “balls (46) which are held in groups in pairs of grooves”
- b. Claim 16: all limitations therein

Claim Rejections - 35 USC § 112

8. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

9. Claims 2, 6 & 13 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

- a. Claims 2, 6 & 13 recite the limitation, "the ball cage" but it is not clear which of the previously recited cages is "the ball cage".
- b. Claim 6 recites that the outer joint part is formed with "an inner cylindrical guiding face (25)". However, there does not appear to be an inner cylindrical surface in the outer joint 12. Nor does such a feature appear to even be suggested by the drawings. As such it is not possible to determine the metes and bounds of the claim.

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claims 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Welschhof et al, US 6,390,928 (Welschhof) in view of Song, US 6,468,164 . In Fig. 5, Welschhof shows a driveshaft 11 comprising two constant velocity joints 12 & 13 and an intermediate shaft 14. The

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intermediate shaft 14 includes a longitudinal plunging unit 15 comprising all the limitations of that in the claim. Each of the constant velocity joints 12 & 13 comprises all the limitations of that in the claim except the joints 12 & 13 are not expressly disclosed as cross groove joints. In Figs. 1-5, Song shows a cross groove constant velocity joint comprising all the limitations of that of the claim and teaches at col. 2, lines 22-46 using same in order to provide a constant velocity joint that is simple to manufacture and offers high joint articulation and excellent ball support at high angles. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the driveshaft of Welschhof by making either one or both of the constant velocity joints in the form of a cross joint similar to that of Song in order to provide a driveshaft with a constant velocity joint that is simple to manufacture and offers high joint articulation and excellent ball support at high angles.

12. Claims 2, 6 & 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Welschhof in view of Song as applied to claim 1 above, and further in view of Ingalsbe et al, US 5,292,285 (Ingalsbe). The combination of Welschhof and Song comprises all the limitations of the claim except a cylindrical surface at the inner surface of the ball cage in the constant velocity joint. In Fig. 2, Ingalsbe shows a constant velocity joint comprising a ball cage 20 with an inner cylindrical surface 21 and teaches at col. 4, lines 14-30 using such an assemblage in order to provide a driving connection between the inner and outer races of the joint while permitting relative angular movement there between. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the combination of Welschhof and Song by making cylindrical the inner surface of the constant velocity joint's ball cage in order to provide a driving

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connection between the inner and outer races of the joint while permitting relative angular movement there between as taught by Ingalsbe.

As to claim 13, the combination of Welschhof, Song and Ingalsbe fails to include conical end regions on the outer face of the inner joint part of the constant velocity joint. However, applicant has not disclosed that providing conical end regions solves any particular problem or are provided for any other particular reason. Therefore modifying the combination so that it includes such a feature would have been obvious to one of ordinary skill in the art since such a modification would have involved a mere change in the shape of the outer face of the inner joint member. A change in shape is generally recognized as being within the level of ordinary skill in the art. *In re Dailey*, 357 F.2d 669, 149 USPQ 47 (CCPA 1966).

13. Claims 15 & 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Welschhof in view of Song as applied to claim 1 above, and further in view of McLean et al, US 4,791,269 (McLean). The combination of Welschhof and Song comprises all the limitations of the claim except the journal in the intermediate shaft is shown as solid, not hollow. However, McLean discloses that a hollow journal 15 (see Fig. 2) is a functional equivalent of a solid journal 14 (see Fig. 1). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the combination of Welschhof and Song by making the journal hollow instead of solid since a hollow journal is a functional equivalent of solid journal as taught by McLean.

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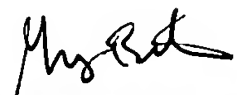
Conclusion

14. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Wakamatsu shows a driveshaft 11 comprising two VL joints 13, 14 and an intermediate shaft 12. At Figure C on page 16, the GKN product manual shows a driveshaft comprising two cross groove joints and an intermediate shaft. In Fig. 1, Jacob '456 shows a driveshaft comprising two constant velocity joints 1 & 2 and an intermediate plunging sideshaft 3, 4. In Fig. 1, Jacob et al '738 shows a driveshaft 1 comprising two constant velocity joints 2 & 3 and an intermediate plunging sideshaft 4 with a hollow journal 11.

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Greg Binda whose telephone number is (571) 272-7077. The examiner can normally be reached on M-F 9:30 am to 7:00 pm with alternate Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Daniel P. Stodola can be reached on (571) 272-7087. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


GREGORY J. BINDA
PRIMARY EXAMINER